

U.S. Patent Application Serial No. 09/916,314
Amendment filed November 16, 2005
Reply to OA dated August 25, 2005

AMENDMENTS TO THE CLAIMS:

Please amend claim 11 and add new claim 21, as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Canceled).

Claim 2 (Previously Presented): An organic EL element comprising:

an organic EL layer formed between an anode and a cathode; and

said cathode consisting of a first conductive film that contacts to said organic EL layer and a second conductive film that constitutes a laminated structure together with said first conductive film, said first conductive film containing any one of an alkaline metal and an alkaline earth metal, and

said second conductive film containing any one of at least one type metal selected from the group consisting of Ru (ruthenium), Rh (rhodium), Ir (iridium), Os (osmium), Re (rhenium) and the oxides of Ru, Rh, Ir, Os and Re.

Claims 3 - 6 (Canceled).

Claim 7 (Previously Presented): An organic EL element comprising:

U.S. Patent Application Serial No. 09/916,314
Amendment filed November 16, 2005
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an anode;

a buffer layer which is formed of at least one type metal selected from a group consisting of Ru, Mo, and V on said anode and a surface of which is oxidized, said buffer layer comprises said oxidized surface and an unoxidized layer under said oxidized surface;

an organic EL layer formed to be contacted to said oxidized surface of said buffer layer; and
a cathode formed on said organic EL layer.

Claim 8 (Original): An organic EL element according to claim 7, wherein said cathode contains any one of an alkaline metal and alkaline earth metal.

Claims 9-10 (Canceled).

Claim 11 (Currently amended): An organic EL display device comprising:

a substrate;

a lower electrode formed on said substrate;

an organic EL layer formed on said lower electrode to have areas in which a the conjugate ~~length~~ lengths of polymer ~~is~~ are different from each other so that these areas have two different luminous colors or more; and

an upper electrode formed on said organic EL layer,

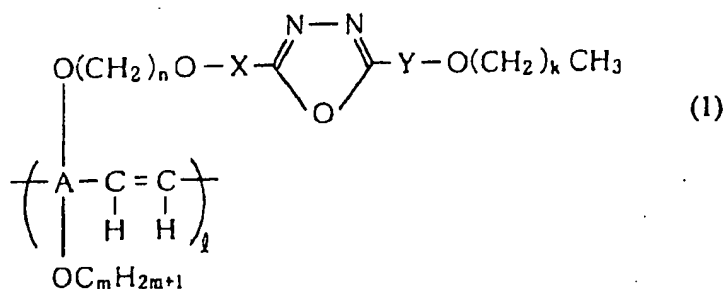
wherein a material of said organic EL layer is the polymer whose conjugate length is

shortened by light irradiation to change the luminous color.

Claim 12 (Canceled).

Claim 13 (Withdrawn): Organic EL material consisting of:

material made of organic material expressed by a general formula (1)



(Where A is a residue obtained by removing at least four hydrogen atoms from an aromatic compound or a heterocyclic compound,

X is an atomic group to which at least two groups that are selected from a group consisting of a residue obtained by removing at least two hydrogen atoms from benzene and a residue obtained by removing at least two hydrogen atoms from cyclohexane are bonded,

Y is an atomic group to which a residue obtained by removing at least two hydrogen atoms from benzene is bonded or at least two residues each obtained by removing at least two hydrogen atoms from benzene are bonded, and

U.S. Patent Application Serial No. 09/916,314
Amendment filed November 16, 2005
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k, m and n are an integer respectively.)

Claim 14 (Withdrawn): Organic EL material according to claim 13, wherein n in said general formula (1) is an integer to satisfy a condition of $5 \leq n \leq 15$, and k is an integer to satisfy a condition of $5 \leq k \leq 15$.

Claim 15 (Withdrawn): Organic EL material according to claim 13, wherein A in said general formula (1) is a residue that is obtained by removing four hydrogen atoms from benzene.

Claim 16 (Withdrawn): Organic EL material according to claim 13, wherein X in said general formula (1) contains any atomic group in which a biphenylene group or a phenylene group and a cyclohexylene group are bonded.

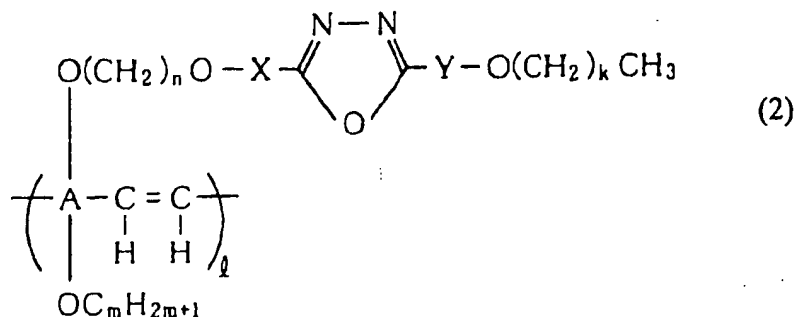
Claim 17 (Withdrawn): Organic EL material according to claim 13, wherein Y in said general formula (1) is a phenylene group.

Claim 18 (Withdrawn): A plane emission device employing organic material, comprising:
a transparent substrate;

a transparent conductive film for covering one surface of said transparent substrate;

an alignment film formed on a surface of said transparent conductive film;

a luminous layer made of organic material expressed by a general formula (2)



(Where A is a residue obtained by removing at least four hydrogen atoms from an aromatic compound or a heterocyclic compound,

X is an atomic group to which at least two groups that are selected from a group consisting of a residue obtained by removing at least two hydrogen atoms from benzene and a residue obtained by removing at least two hydrogen atoms from cyclohexane are bonded,

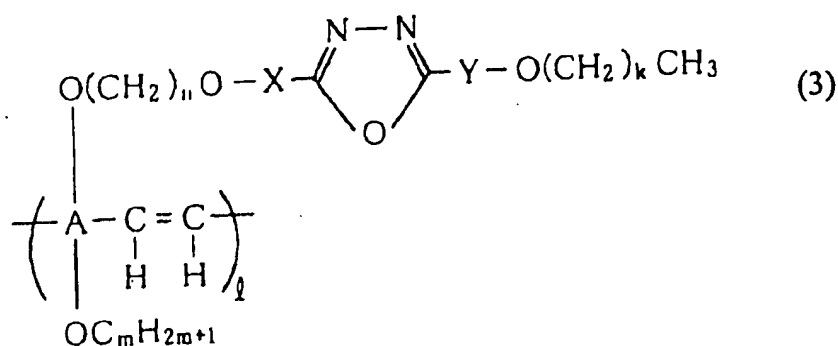
Y is an atomic group to which a residue obtained by removing at least two hydrogen atoms from benzene is bonded or at least two residues each obtained by removing at least two hydrogen atoms from benzene are bonded, and

k, m and n are an integer respectively.); and

an electrode layer formed on a surface of said luminous layer.

Claim 19 (Withdrawn): A display device employing organic material, comprising:

- a transparent substrate;
- a transparent conductive film for covering one surface of said transparent substrate;
- an alignment film formed on a surface of said transparent conductive film;
- a luminous layer made of organic material expressed by a general formula (3)



(Where A is a residue obtained by removing at least four hydrogen atoms from an aromatic compound or a heterocyclic compound,

X is an atomic group to which at least two groups that are selected from a group consisting of a residue obtained by removing at least two hydrogen atoms from benzene and a residue obtained by removing at least two hydrogen atoms from cyclohexane are bonded,

Y is an atomic group to which a residue obtained by removing at least two hydrogen atoms from benzene is bonded or at least two residues each obtained by removing at least two hydrogen atoms from benzene are bonded, and

k, m and n are an integer respectively.);

U.S. Patent Application Serial No. 09/916,314
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an electrode layer formed on a surface of said luminous layer;

a liquid crystal layer arranged on a second surface on an opposite side to said first surface of said transparent substrate; and

a polarizing plate arranged on said liquid crystal layer.

Claim 20 (Previously Presented): An organic EL element comprising:

an organic EL layer formed between an anode and a cathode; and

said cathode consisting of a first conductive film that contacts to said organic EL layer and a second conductive film that constitutes a laminated structure together with said first conductive film, said first conductive film containing any one of an alkaline metal and an alkaline earth metal, and said second conductive film is formed of a laminated film consisting of:

a conductive film containing any one of at least one type metal selected from the group consisting of Ru, Rh, Ir, Os, Re and the oxides of Ru, Rh, Ir, Os and Re, and

any one of a TiN film and a laminate film formed of a Ti film and a TiN film on said Ti film.

Claim 21 (New): An organic EL display device according to claim 11, wherein said material of said organic EL layer that is not subjected to the light irradiation emits red-color light.